

AMENDMENT TO THE CLAIMS

1-30. (Cancelled)

31. (Currently amended) A method for forming a shallow junction comprising the steps of:

forming an amorphous layer at a shallow region in a silicon substrate by irradiating a plasma containing He; and

introducing ~~boreon~~ an impurity by applying a plasma to the shallow region of the silicon substrate; and

applying light having an intensity peak at a wavelength of 375nm or longer on the silicon substrate so that said shallow region is excited selectively and the shallow junction is formed electrically activated with the impurity ~~boreon~~.

32. (Canceled)

33. (Previously presented) The method for forming a shallow junction according to claim 31, wherein the plasma is comprised mainly of He.

34. (Previously presented) The method for forming a shallow junction according to claim 31, wherein the plasma consists of He.

35. (Canceled)

36. (Currently amended) The method for forming a shallow junction according to claim 31, wherein, assuming that wavelength is λ (nm) and light absorption ratio is A(%), the light absorption rate of a layer which is formed by introducing the ~~bore~~ impurity into the substrate satisfies at least one of following conditions:

- at the wavelength ranging from 375 nm (inclusive) to 500 nm, $A > 7E32\lambda^{-12.316}$;
- at the wavelength ranging from 500 nm (inclusive) to 600 nm, $A > 2E19\lambda^{-7.278}$;
- at the wavelength ranging from 600 nm (inclusive) to 700 nm, $A > 4E14\lambda^{-5.5849}$; and
- at the wavelength ranging from 700 nm (inclusive) to 800 nm, $A > 2E12\lambda^{-4.773}$.

37. (Currently amended) The method for forming a shallow junction according to claim 31, wherein, assuming that wavelength is λ (nm) and absorption coefficient is α (cm⁻¹), the light absorption coefficient of a layer which is formed by introducing the ~~bore~~ impurity into the substrate satisfies at least one of following conditions:

- at the wavelength ranging from 375 nm (inclusive) to 500 nm, $\alpha > 1E38\lambda^{-12.505}$;
- at the wavelength ranging from 500 nm (inclusive) to 600 nm, $\alpha > 1E24\lambda^{-7.2684}$;
- at the wavelength ranging from 600 nm (inclusive) to 700 nm, $\alpha > 2E19\lambda^{-5.5873}$; and
- at the wavelength ranging from 700 nm (inclusive) to 800 nm, $\alpha > 1E17\lambda^{-4.7782}$.

38-39. (Canceled)

40. (Previously presented) The method for forming a shallow junction according to claim 31, wherein the step of applying light is a step of irradiating light having an intensity peak at wavelength longer than 375 nm (inclusive) and shorter than 800 nm (inclusive).

41. (Previously presented) The method for forming a shallow junction according to claim 40, wherein the light having the intensity peak at the wavelength longer than 375 nm (inclusive) and shorter than 800 nm (inclusive) is a xenon flash lamp light.

42. (Previously presented) The method for forming a shallow junction according to claim 31, wherein the silicon substrate is a substrate having a (100) plane or the silicon substrate comprises a plane inclined from the (100) plane by several degrees.

43. (Currently amended) The method for forming a shallow junction according to claim 31, wherein, assuming that wavelength is λ (nm) and absorption ratio is A (%), the light absorption ratio of a layer into which the impurity ~~boron~~ is introduced for light having a wavelengths longer than 375 nm (inclusive) and shorter than 800 nm (inclusive) satisfies $A > 1E19\lambda^{-6.833}$.

44. (Currently amended) The method for forming a shallow junction according to claim 31, wherein, assuming that wavelength is λ (nm) and absorption coefficient is α (cm^{-1}), the light absorption coefficient of a layer into which the impurity ~~boron~~ is introduced to light having wavelengths longer than 375 nm (inclusive) and shorter than 800 nm (inclusive) satisfies $\alpha > 1E19\lambda^{-7.1693}$.

45. (Currently amended) The method for forming a shallow junction according to claim 31, wherein the step of introducing the impurity ~~boron~~ is a step of introducing the impurity ~~boron~~ by plasma doping.

46. (Previously presented) The method for forming a shallow junction according to claim 31, wherein the substrate is a SOI substrate with a Silicon thin film formed on a surface thereof.

47. (Previously presented) The method for forming a shallow junction according to claim 31, wherein the substrate is a strained Si substrate with a Si film formed on a surface thereof.

48. (Previously presented) The method for forming a shallow junction according to claim 31, wherein the substrate is a glass substrate with a poly-Si thin film formed on a surface thereof.

49. (Previously presented) A processed material formed by the method for forming a shallow junction according to claim 31.

50. (New) The method for forming a shallow junction according to claim 31, wherein the impurity includes boron.

51. (New) The method for forming a shallow junction according to claim 31, wherein the substrate includes a single crystalline silicon substrate.